

Community Coordinated Modeling Center: Addressing Needs of Operational Space Weather Forecasting

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Models are key elements of space weather forecasting. The Community Coordinated Modeling Center (CCMC, <http://ccmc.gsfc.nasa.gov>) hosts a broad range of state-of-the-art space weather models and enables access to complex models through an unmatched automated web-based runs-on-request system. Model output comparisons with observational data carried out by a large number of CCMC users open an unprecedented mechanism for extensive model testing and broad community feedback on model performance. The CCMC also evaluates model's prediction ability as an unbiased broker and supports operational model selections. The CCMC is organizing and leading a series of community-wide projects aiming to evaluate the current state of space weather modeling, to address challenges of model-data comparisons, and to define metrics for various user's needs and requirements. Many of CCMC models are continuously running in real-time. Over the years the CCMC acquired the unique experience in developing and maintaining real-time systems. CCMC staff expertise and trusted relations with model owners enable to keep up to date with rapid advances in model development. The information gleaned from the real-time calculations is tailored to specific mission needs. Model forecasts combined with data streams from NASA and other missions are integrated into an innovative configurable data analysis and dissemination system (<http://iswa.gsfc.nasa.gov>) that is accessible world-wide. The talk will review the latest progress and discuss opportunities for addressing operational space weather needs in innovative and collaborative ways.